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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,857	01/30/2002	Takahiro Kato	041465-5134	3634

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EXAMINER	
CHEN, TIANJIE	
ART UNIT	**PAPER NUMBER**
2652	9

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/058,857	KATO ET AL.	
	Examiner	Art Unit	
	Tianjie Chen	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *5,6,11-13 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-10,* is/are rejected.

7)☒ Claim(s) *14 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Final Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kamioka et al (US 5,535,076).

With regard to claim 1, Kamioka et al shows a supporting mechanism in Fig.8(a) for movably supporting a member 33 (Fig. 6) to be supported along a supporting shaft 32, including: a plurality of supporting members 39a and 39b provided on the member to be supported, each of the supporting members contacting with the supporting shaft on two contact points (Fig. 8a) so as to be movable supporting shaft, the at least two contact points being apart from each other; and a pressing device 52 (Column 7, lines 34-35) for pressing the plurality of supporting members against the supporting shaft so that the contact points of each supporting member simultaneously come into contact with the supporting shaft.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igawa et al (JP 10-74370 A) in view of Hasegawa (5,546,252).

With regard to claim 1, Igawa et al shows a supporting mechanism in Figs. 20-27 for movably supporting a member 4 to be supported along a supporting shaft 8, including: a plurality of supporting members (Fig. 27, the two support tabs to support the shaft) provided on the member 4 (Fig. 20) to be supported, and a pressing device 13 for pressing the plurality of supporting members against the supporting shaft.

Igawa et al does not show that each of the supporting members contacting with the supporting shaft on at least two contact points, at least two contact points being apart from each other so as to be movable on the supporting shaft.

Hasegawa shows a supporting mechanism in Fig. 3, wherein each of the supporting members – bearings 15a and 15b contacting with the supporting shaft 10 on at least two contact points, the at least two contact points being apart from each other so as to be movable on the supporting shaft.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to use the two support members taught by Hasegawa into Igawa et al's device. The rationale is as follows: Igawa et al teaches the support members but is silent on the structure of the support member. Hasegawa teaches that using bearing 15a and 15b as the support member would be able to hold the shaft with high degree of accuracy so that no toque is induced, thereby it is possible to reduce noise (Column 6, lines 52-56). One of ordinary skill in the art would have been motivated to use the bearings to obtain higher degree of accuracy and reduce noise.

With regard to claim 2, Hasegawa further shows that the supporting member has two contact surfaces, which include the contact points, respectively and are in

parallel with the supporting shaft, and the pressing device comes into contact with the supporting shaft at a position existing between the supporting members in a parallel direction with the supporting shaft to press the supporting shaft.

With regard to claims 3 and 4, Igawa et al Hasegawa further shows that the supporting shaft 8 has an outer circumferential surface on which a threaded portion is formed to move the member to be supported, and the pressing device 13 is fixed to the member to be supported and includes a rack gear engaging with the threaded portion so as to move the member along the supporting shaft.

With regard to claim 7, Hasegawa further shows that the at least two contact points are apart from each other in a circumferential direction of the supporting shaft.

With regard to claim 8, the above constructed device includes a feeding unit including: (a) a supporting mechanism for movably supporting a member to be supported along a supporting shaft, including: a plurality of supporting members provided on the member, each of the supporting members contacting with the supporting shaft on at least two contact points so as to be movable on the supporting shaft, the at least two contact points being apart from each other, the supporting shaft having an outer circumferential surface on which a threaded portion is formed to move the member to be supported; and a pressing device for pressing the plurality of supporting members against the supporting shaft so that the contact points of each supporting member simultaneously come into contact with the supporting shaft and the plurality of supporting members simultaneously come into contact with the supporting shaft, the pressing device being fixed to the member to be supported and includes a rack gear engaging with the threaded portion so as to move the member along the supporting shaft; and (b) a rotation device 9 (English translation, [0009] line

13) for rotating the threaded portion engaging with the rack gear, thereby moving the member to be supported along the supporting shaft.

With regard to claim 9, in above constructed device, the supporting member has two contact surfaces, which include the contact points, respectively and are in parallel with the supporting shaft, and the pressing device comes into contact with the supporting shaft at a position existing between the supporting members in a parallel direction with the supporting shaft to press the supporting shaft.

With regard to claim 10, Hasegawa further shows that the at least two contact points are apart from each other in a circumferential direction of the supporting shaft.

Allowable Subject Matter

3. Claims 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- With regard to claims 14 and 15, as the closest reference, the combination of Igawa (JP 10-74370 A) and Hasegawa (US 5,546,252) shows a supporting mechanism having supporting members, **but fails to show** that each of the supporting members is opened in a radius direction of the supporting shaft, enabling the supporting shaft to shift in the radius direction thereof to be received in the supporting member.
- Applicant asserts that in such a configuration, it is unnecessary to form the whole bodies of the supporting members with a high procession, which helps to reduce manufacturing cost of the feeding unit itself (Specification, p. 5, lines 25-27).

Response to Arguments

4. Applicant's arguments filed 06/03/2004 have been fully considered but they are not persuasive.

- In Komioka et al (US 5,535,076)'s Fig. 8(a), 39a contacts 32 at two points: one at left and one at right. It is well known in the art that as a hemi-circular tip of 39a is pressed into a groove on 32, there must be two contact points.
- In Hasegawa (US 5,546,252)'s Figs. 1-3, the bearing 15a and 15b are fixed on 14, which moves on the feed screw 10 as shown in Fig. 1.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TIANJIE CHEN
PRIMARY EXAMINER